Eclipse Engineering, Inc.
consulting engineers

January 24, 2005

Ron McManamy
Environmental Quality Management
6825 216th Street SW, Suite J
Lynnwood, WA 98036

Re: Pre-removal roof occupancy assessment
Former Mobile Shop
Stimpson Lumber Mill
Libby, Montana

Ron,

As requested, I have performed a structural assessment of the above noted building. This was done in order to provide recommendations of risk associated with workers performing concrete removal actions while working on the roof (roof occupancy) and by what means shall risk reduction be implemented to remedy the potential risk.

The existing roof construction is T&G decking over roof rafters over timber trusses that are supported by massive timber columns. The T&G is 2x6 (1.5 inches x 5.5 inches). The roof rafters are roughly 6'-9" on center and are roughly 8 x 12 (7.5 inches x 11.5 inches) in size. At the time of the inspection I was not able to access the roof rafters to verify the size, but I am very comfortable that they are a minimum of 8x12 in size. If during construction the rafters are found to be smaller than this assumed size Eclipse Engineering shall be notified. The roof trusses are spaced roughly 20'-3" on center and span the 54'-6" direction of the shop. The roof trusses are constructed with 8 x 12 (7.5 inches x 11.5 inches) top and bottom chords (laid flat). The webs are a mixture of 8x12 timbers and 1-inch diameter tie rods. The appears to be no mechanical fasteners for wood-to-wood connections in the trusses. The vertical tie rods are anchored to the bottom chords with roughly 3x3x1/4" plate washers. It is assumed that the same connection is used to the vertical tie rod to the top chord of the truss. The diagonal tie rods are connected to the bottom chord of the truss with roughly an L3x3x1/4 angle mounted to the underside of the bottom chord. The tie rod goes through the bottom chord and the angle iron and is bolted to the angle. It is assumed that a similar connection is used at the top chord of

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the truss. The timber columns supporting the roof trusses are 12x26 (11.5x25.5inches) timbers. There is a 20inch x 42inch x 3.5 inch pad poured on top of the concrete slab on grade that the columns sit on.

The assumed existing roofing material consists of a layer of tarpaper over a layer of tar over a 4-inch layer of aerated concrete. The dead load of this roofing material (including T&G decking) was estimated to be 45 psf. The snow load for the Libby area is 56 psf.

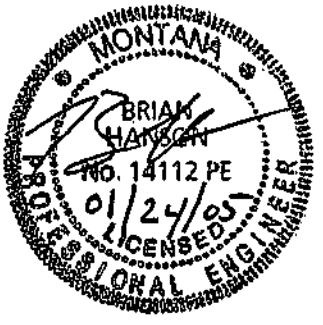
Section 507 of the International Existing Building Code, 2003 Edition, states, "Where replacement of roofing or equipment results in additional dead loads, structural components supporting such re-roofing or equipment shall comply with the vertical load requirements of the International Building Code". For the current project scope we are not increasing the dead load on the existing structure and therefore we are not required to upgrade the structural components of the existing building. We have determined that the roof rafters, timber trusses and columns are adequate to support the construction loads (20 psf live, 45 psf dead, 300 # point load) imposed during the concrete topping removal. However during our inspection it was noted that the existing 2x6 decking has extensive areas of rotting and therefore would not be able to support the loading that would occur during the concrete roof removal. At the time of this letter we are coordinating with Rick Singer (EQM) to determine a cost effective option to upgrade the existing roof decking in order to support the construction loads.

Section 507.3 of the International Existing Building Code, 2003 Edition, states "Where roofing materials are removed from more than 50 percent of the roof diaphragm of a building where the roof diaphragm is a part of the main wind force-resisting system the integrity of the roof diaphragm shall be evaluated and if found deficient because of insufficient or deteriorated connections, such connections shall be provided or replaced." Therefore once the roofing material is removed the existing decking shall be inspected to see if there are (2) 16d nails at each 2x6 decking board to all supporting members, as well as 16d nails at 6" on center from the decking to the end walls.

We have analyzed the roof structure only for the loads incurred during removal of the concrete roof slab of the above noted structure described in this letter. Our roof assessment was not performed to bring the existing building up to the requirements of the International Building Code, 2003 Edition. We hold no responsibility for any other element or the integrity of the structure as a whole. Please call with any specific questions.

Sincerely,

Eclipse Engineering, Inc.



Brian Hanson, P.E.
Project Engineer